From Counterculture to Cyberculture

Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism

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Introduction

In the mid-1990s, as first the Internet and then the World Wide Web swung into public view, talk of revolution filled the air. Politics, economics, the nature of the self—all seemed to teeter on the edge of transformation. The Internet was about to "flatten organizations, globalize society, decentralize control, and help harmonize people," as MIT's Nicholas Negroponte put it.[1] The stodgy men in gray flannel suits who had so confidently roamed the corridors of industry would shortly disappear, and so too would the chains of command on which their authority depended. In their place, wrote Negroponte and dozens of others, the Internet would bring about the rise of a new "digital generation"—playful, self-sufficient, psychologically whole—and it would see that generation gather, like the Net itself, into collaborative networks of independent peers.[2] States too would melt away, their citizens lured back from archaic party-based politics to the "natural" agora of the digitized marketplace. Even the individual self, so long trapped in the human body, would finally be free to step outside its fleshy confines, explore its authentic interests, and find others with whom it might achieve communion. Ubiquitous networked computing had arrived, and in its shiny array of interlinked devices, pundits, scholars, and investors alike saw the image of an ideal society: decentralized, egalitarian, harmonious, and free.

But how did this happen? Only thirty years earlier, computers had been the tools and emblems of the same unfeeling industrial-era social machine whose collapse they now seemed ready to bring about. In the winter of 1964, for instance, students marching for free speech at the University of California at Berkeley feared that America's political leaders were treating them as if they were bits of abstract data.

One after another, they took up blank computer cards, punched them through with new patterns of holes—"FSM" and "STRIKE"—and hung them around their necks.[3] One student even pinned a sign to his chest that parroted the cards' user instructions: "I am a UC student. Please do not fold, bend, spindle or mutilate me."[4] For the marchers of the Free Speech Movement, as for many other Americans throughout the 1960s, computers loomed as technologies of dehumanization, of centralized bureaucracy and the rationalization of social life, and, ultimately, of the Vietnam War. Yet, in the 1990s, the same machines that had served as the defining devices of cold war technocracy emerged as the symbols of its transformation. Two decades after the end of the Vietnam War and the fading of the American counterculture, computers somehow seemed poised to bring to life the countercultural dream of empowered individualism, collaborative community, and spiritual communion. How did the cultural meaning of information technology shift so drastically?

As a number of journalists and historians have suggested, part of the answer is technological. By the 1990s, the room-sized, stand-alone calculating machines of the cold war era had largely disappeared.[5] So too had the armored rooms in which they were housed and the army of technicians that supported them. Now Americans had taken up microcomputers, some the size of notebooks, all of them available to the individual user, regardless of his or her institutional standing. These new machines could perform a range of tasks that far exceeded even the complex calculations for which digital computers had first been built. They became communication devices and were used to prepare novels and spreadsheets, pictures and graphs. Linked over telephone wires and fiber-optic cables, they allowed their users to send messages to one another, to download reams of information from libraries around the world, and to publish their own thoughts on the World Wide Web. In all of these ways, changes in computer technology expanded the range of uses to which computers could be put and the types of social relations they were able to facilitate.

As dramatic as they were, however, these changes alone do not account for the particular utopian visions to which computers became attached. The fact that a computer can be put on a desktop, for instance, and that it can be used by an individual, does not make it a "personal" technology. Nor does the fact that individuals can come together by means of computer networks necessarily require that their gatherings become "virtual communities." On the contrary, as Shoshanna Zuboff has pointed out, in the office, desktop computers and computer networks can become powerful tools for integrating the individual ever more closely into the corporation.[6] At home, those same machines not only allow schoolchildren to download citations from

the public library; they also turn the living room into a digital shopping mall. For retailers, the computer in the home becomes an opportunity to harvest all sorts of information about potential customers. For all the utopian claims surrounding the emergence of the Internet, there is nothing about a computer or a computer network that *necessarily* requires that it level organizational structures, render the individual more psychologically whole, or drive the establishment of intimate, though geographically distributed, communities.

How was it, then, that computers and computer networks became linked to visions of peer-to-peer ad-hocracy, a leveled marketplace, and a more authentic self? Where did these visions come from? And who enlisted computing machines to represent them?

To answer these questions, this book traces the previously untold history of an extraordinarily influential group of San Francisco Bay area journalists and entrepreneurs: Stewart Brand and the Whole Earth network. Between the late 1960s and the late 1990s, Brand assembled a network of people and publications that together brokered a series of encounters between bohemian San Francisco and the emerging technology hub of Silicon Valley to the south. In 1968 Brand brought members of the two worlds together in the pages of one of the defining documents of the era, the *Whole Earth Catalog*. In 1985 he gathered them again on what would become perhaps the most influential computer conferencing system of the decade, the Whole Earth 'Lectronic Link, or the WELL. Throughout the late 1980s and early 1990s, Brand and other members of the network, including Kevin Kelly, Howard Rheingold, Esther Dyson, and John Perry Barlow, became some of the most-quoted spokespeople for a countercultural vision of the Internet. In 1993 all would help create the magazine that, more than any other, depicted the emerging digital world in revolutionary terms: *Wired*.

By recounting their history, this book reveals and helps to explain a complex intertwining of two legacies: that of the military-industrial research culture, which first appeared during World War II and flourished across the cold war era, and that of the American counterculture. Since the 1960s scholarly and popular accounts alike have described the counterculture in terms first expressed by its members—that is, as a culture antithetical to the technologies and social structures powering the cold war state and its defense industries. In this view the 1940s and 1950s are often seen as a gray time shaped by rigid social norms, hierarchical institutions, and the constant demands of America's nuclear face-off with the Soviet Union. The 1960s seem to explode onto the scene in a Technicolor swirl of personal exploration and political protest, much of it aimed at bringing down the cold war military-industrial bureaucracy. Those who accept this version of events

tend to account for the persistence of the military-industrial complex today, and for the continuing growth of corporate capitalism and consumer culture as well, by arguing that the authentically revolutionary ideals of the generation of 1968 were somehow co-opted by the forces they opposed.

There is some truth to this story. Yet, as it has hardened into legend, this version of the past has obscured the fact the same military-industrial research world that brought forth nuclear weapons—and computers—also gave rise to a free-wheeling, interdisciplinary, and highly entrepreneurial style of work. In the research laboratories of World War II and later, in the massive military engineering projects of the cold war, scientists, soldiers, technicians, and administrators broke down the invisible walls of bureaucracy and collaborated as never before. As they did, they embraced both computers and a new cybernetic rhetoric of systems and information. They began to imagine institutions as living organisms, social networks as webs of information, and the gathering and interpretation of information as keys to understanding not only the technical but also the natural and social worlds.

By the late 1960s, so too did substantial elements of the counterculture. Between 1967 and 1970, for instance, tens of thousands of young people set out to establish communes, many in the mountains and the woods. It was for them that Brand first published the *Whole Earth Catalog*. For these back-to-the-landers, and for many others who never actually established new communities, traditional political mechanisms for creating social change had come up bankrupt. Even as their peers organized political parties and marched against the Vietnam War, this group, whom I will call the New Communalists, turned away from political action and toward technology and the transformation of consciousness as the primary sources of social change. If mainstream America had become a culture of conflict, with riots at home and war abroad, the commune world would be one of harmony. If the American state deployed massive weapons systems in order to destroy faraway peoples, the New Communalists would deploy small-scale technologies—ranging from axes and hoes to amplifiers, strobe lights, slide projectors, and LSD—to bring people together and allow them to experience their common humanity. Finally, if the bureaucracies of industry and government demanded that men and women become psychologically fragmented specialists, the technology-induced experience of togetherness would allow them to become both self-sufficient and whole once again.

For this wing of the counterculture, the technological and intellectual output of American research culture held enormous appeal. Although they rejected the military-industrial complex as a whole, as well as the political process that brought it into being, hippies from Manhattan to Haight-Ashbury read Norbert Wiener, Buckminster Fuller, and Marshall McLuhan.

Through their writings, young Americans encountered a cybernetic vision of the world, one in which material reality could be imagined as an information system. To a generation that had grown up in a world beset by massive armies and by the threat of nuclear holocaust, the cybernetic notion of the globe as a single, interlinked pattern of information was deeply comforting: in the invisible play of information, many thought they could see the possibility of global harmony.

To Stewart Brand and later to other members of the Whole Earth group, cybernetics also presented a set of social and rhetorical resources for entrepreneurship. In the early 1960s, not long after graduating from Stanford University, Brand found his way into the bohemian art worlds of San Francisco and New York. Like many of the artists around him at the time, and like Norbert Wiener, in whose writings on cybernetics they were immersed, Brand quickly became what sociologist Ronald Burt has called a "network entrepreneur."[7] That is, he began to migrate from one intellectual community to another and, in the process, to knit together formerly separate intellectual and social networks. In the *Whole Earth Catalog* era, these networks spanned the worlds of scientific research, hippie homesteading, ecology, and mainstream consumer culture. By the 1990s they would include representatives of the Defense Department, the U.S. Congress, global corporations such as Shell Oil, and makers of all sorts of digital software and equipment.

Brand brought these communities together in a series of what I will call *network forums*. Drawing on the systems rhetoric of cybernetics and on models of entrepreneurship borrowed from both the research and the countercultural worlds, Brand established a series of meetings, publications, and digital networks within which members of multiple communities could meet and collaborate and imagine themselves as members of a single community. These forums in turn generated new social networks, new cultural categories, and new turns of phrase. In 1968 Brand founded the *Whole Earth Catalog* in order to help those heading back to the land find the tools they would need to build their new communities. These items included the fringed deerskin jackets and geodesic domes favored by the communards, but they also included the cybernetic musings of Norbert Wiener and the latest calculators from Hewlett-Packard. In later editions, alongside discussions of such supplies, Brand published letters from high-technology researchers next to firsthand reports from rural hippies. In the process, he offered commune-based subscribers a chance to see their own ambitions as commensurate with the technological achievements of mainstream America, and he gave technologists the opportunity to imagine their diodes and relays as tools, like those the commune dwellers favored, for the

transformation of individual and collective consciousness. Together, the creators and readers of the *Whole Earth Catalog* helped to synthesize a vision of technology as a countercultural force that would shape public understandings of computing and other machines long after the social movements of the 1960s had faded from view.

In the 1980s and 1990s, as computers became ever smaller and more interconnected, and as corporations began to employ increasingly flexible modes of production, Brand and his colleagues repeated this process at the WELL, in the Global Business Network, through *Wired,* and in a series of meetings and organizations associated with all three. In each case, a network entrepreneur (often Brand himself) gathered members of multiple communities within a single material or textual space. The members of those networks collaborated on the various projects at hand and developed a shared language for their work. Out of that language emerged shared understandings—of the potential social impact of computing, of information and information technologies as metaphors for social processes, and of the nature of work in a networked economic order. Often enough, the systems on which network members appeared became models in their own right of these new understandings. Even when they did not, members often took the insights they had gleaned back into their social and professional worlds. In this way ideas born within *Whole Earth*–derived network forums became key frames through which both public and professional technologists sought to comprehend the potential social impact of information and information technologies. Over time, the network's members and forums helped redefine the microcomputer as a "personal" machine, computer communication networks as "virtual communities," and cyberspace itself as the digital equivalent of the western landscape into which so many communards set forth in the late 1960s, the "electronic frontier."

At the same time, and by means of the same social processes, members of the Whole Earth network made themselves visible and credible spokesmen for the socio-technical visions that they had helped create. Traditionally, sociologists have depicted journalists in terms set by the professional norms of newspapers and magazines: as reporters of a consensus achieved among communities from which they were analytically, if not actually, separated. In this view, a reporter's prestige depends on her or his ability to dig up new information, report it in a compelling way, and make it visible to a broad public (which itself is seen as analytically distinct from either the community of sources or the community of journalists). Brand and other writers and editors associated with the Whole Earth publications developed extraordinary reputations as journalists, winning, among other prizes, the National Book Award (for the *Whole Earth Catalog*) and the National Magazine Award (for *Wired*).

They did so, however, by building the communities on whose activities they were reporting. Within Whole Earth–sponsored network forums, and within the books and articles they spawned, representatives of the technological world met leaders from politics and business, as well as former counterculturalists. Together, their conversations turned digital media into emblems of network members' own, shared ways of living, and evidence of their individual credibility. Again and again, Brand, and later Kevin Kelly, Howard Rheingold, John Perry Barlow, and others, gave voice to the techno-social visions that emerged in these discussions.

As they did, they were welcomed into the halls of Congress, the boardrooms of major corporations, and the hotels of Davos, Switzerland, home of the World Economic Forum. By the mid-1990s, throughout much of the mainstream press and in business and government as well, the networked entrepreneurship of the Whole Earth group and its self-evident financial and social success had become evidence for the transformative power of what many had begun to call the "New Economy." According to a raft of politicians and pundits, the rapid integration of computing and telecommunications technologies into international economic life, coupled with dramatic rounds of corporate layoffs and restructuring, had given rise to a new economic era. Individuals could now no longer count on the support of their employers; they would instead have to become entrepreneurs, moving flexibly from place to place, sliding in and out of collaborative teams, building their knowledge bases and skill sets in a process of constant self-education. The proper role of government in this new environment, many argued, was to pull back, to deregulate the technology industries that were ostensibly leading the transformation, and, while they were at it, business in general.

Proponents of this view included telecommunications executives, high-tech stock analysts, and right-wing politicians. Kevin Kelly, a former editor of the quarterly *Whole Earth Review,* which had grown out of the original *Catalog,* helped to bring them all to the pages of *Wired*. As the magazine's executive editor, he argued that the world was a series of interlocking information systems, all of which were working to corrode the bureaucracies of the industrial era. To Kelly and the other creators of *Wired,* the suddenly public Internet appeared to be both the infrastructure and the symbol of the new economic era. And if it was, they suggested, then those who built their lives around the Net and those who sought to deregulate the newly networked marketplace might in fact be harbingers of a cultural revolution. In the pages of *Wired,* at least, this new elite featured the citizens of the WELL, the members of the Global Business Network, and the founders of the Electronic Frontier Foundation—all groups well woven into the fabric of the Whole Earth community—as well as Microsoft's Bill Gates, libertarian

pundits such as George Gilder, and, on the cover of one issue, conservative Republican Congressman Newt Gingrich.

To those who think of the 1960s primarily as a break with the decades that went before, the coming together of former counterculturalists, corporate executives, and right-wing politicians and pundits may appear impossibly contradictory. But as the history of the Whole Earth network suggests, it isn't. As they turned away from agonistic politics and toward technology, consciousness, and entrepreneurship as the principles of a new society, the communards of the 1960s developed a utopian vision that was in many ways quite congenial to the insurgent Republicans of the 1990s. Although Newt Gingrich and those around him decried the hedonism of the 1960s counterculture, they shared its widespread affection for empowering technologically enabled elites, for building new businesses, and for rejecting traditional forms of governance. And as they rose to power, more than a few right-wing politicians and executives longed to share the hip credibility of people like Stewart Brand.

This book, then, does not tell the story of a countercultural movement whose ideals and practices were appropriated by the forces of capital, technology, or the state. Rather, it demonstrates that the New Communalist wing of the counterculture embraced those forces early on and that in subsequent years, Stewart Brand and the Whole Earth network continued to provide the intellectual and practical contexts within which members of the two worlds could come together and legitimate one another's projects. At the same time, however, this book is not a biography of Stewart Brand. Brand certainly deserves a biography, and one will no doubt be written in the years to come, but this book makes relatively little effort to understand Brand's personal history except insofar as it illuminates his role in reshaping the politics of information. Brand has had a substantial influence in other areas, especially ecology and architectural design, as well as a fascinating personal life, but these will have to wait for other chroniclers. My aim here is to make visible Brand's impact, and that of the networks he helped build, on our understandings of computing and its possible relations to social life. Within this story, Brand is both an influential actor in his own right and an exemplary promoter of a new, networked mode of techno-social life; so too are the journalists, consultants, and entrepreneurs of the Whole Earth network, which is by now far-flung. My challenge in writing this book has been to keep in view simultaneously Brand's unique individual talents, the networking tactics he employed, and the increasing influence of the networks he helped build.

For that reason, I begin with an overview of the broad transformation in popular perceptions of computing that has occurred over the past forty

years, and a reminder of the forgotten affinities between cold war research culture and the counterculture of the New Communalists. I then turn to following Stewart Brand, first into the early 1960s art scene, then to the communes of the Southwest, into the back rooms of Bay area computer science in the 1970s, and on into the corporate world in the 1980s and 1990s. Along the way, I pause to examine in some detail the networks and network forums that Brand has built. As these explorations suggest, Brand's influence on popular understandings of technology has depended not only on his considerable talent for spotting the forward edges of social and technological change, but also on the richness and complexity of the networks he has assembled. I conclude by arguing that Brand's entrepreneurial tactics, and the now-widespread association of computers and computer-mediated communication with the egalitarian social ideals of the counterculture, have become important features of an increasingly networked mode of living, working, and deploying social and cultural power.

Although it is tempting to think of that mode as a product of a revolution in computing technology, I argue that the revolution it represents began long before the public appearance of the Internet or even the widespread distribution of computers. It began in the wake of World War II, as the cybernetic discourse and collaborative work styles of cold war military research came together with the communitarian social vision of the counterculture.

CHAPTER 2

Stewart Brand Meets the Cybernetic Counterculture

In the spring of 1957, at the height of the cold war, Stewart Brand was a nineteen-year-old freshman at Stanford University, and he was deeply worried. Even though Europe lay more than six thousand miles to the east, Brand had begun to write at length in his diary about his fear that the Soviet Union would soon attack the United States. If the Soviets invaded, he wrote, he could expect

> That my life would necessarily become small, a gear with its place on a certain axle of the Communist machine. Perhaps only a tooth on the gear. . . .
> That my mind would no longer be my own, but a tool carefully shaped by the descendants of Pavlov.
> That I would lose my identity.
> That I would lose my will.
> These last are the worst.[1]

Some fifty years later, and more than a decade after the collapse of the Soviet Union, Brand's fears might appear overwrought. But for Brand and other members of his generation in the late 1950s, the possibility of a Soviet attack felt very real. Brand was born in 1938 in Rockford, Illinois, a town not far south of Milwaukee, which specialized in making machine tools. His father was an advertising copywriter and a ham radio operator; his mother, a Vassar-educated homemaker and "space fanatic."[2] In the Brand household, technologies of communication and travel presented vistas of individual and national progress. Both radio sets and rocket ships connected the Brand family to a universe beyond midsized, middle-class, midwestern Rockford.

Thanks primarily to his mother, Brand became a space buff himself. He still keeps a well-worn copy of his childhood favorite, Chesley Bonestell's New Frontier primer *The Conquest of Space*, in his Sausalito, California, office. Even so, Brand suffered from a deep fear of technological Armageddon. "In [the] early '50s somebody compiled a list of prime targets for Soviet nuclear attack," he later remembered, "and we [Rockford] were [number] 7, because of the machine tools." For the young Stewart Brand, as for many other American children in the era, the possibility that the world might come to an end at any moment hung steadily in the air. As a child, he recalled, "I had a nightmare—one of those horrible, vivid, never forget nightmares—there was chaos and then I looked around and I was the only person left alive in Rockford . . . a knee-high creature. So I had an early allergy to nukes."[3]

By the time Brand reached college, alongside the dread of nuclear holocaust, another fear lurked as well: the fear of growing up to become the kind of adult who lived and worked in a hyperrationalized world. While he wrote extensively about the Soviets in his journals, Brand dwelled very little on the risks an invasion might pose to America as a nation. Instead, he focused on the ways that such an invasion might prevent his achieving personal independence and on how it would force him to become a member of a gray, uninspired, Orwellian mass. The Soviets of Brand's imagination were mechanical creatures who would stomp out every trace of individuality if given half a chance. In one sense, as symbols, they pointed backward, calling up the lockstep Nazis of American propaganda some fifteen years before. Yet they also looked forward, to an adulthood in which Brand himself might be compelled to give up his individuality. Both of these senses of *invasion* came to the fore in Brand's diary of 1957, when he wrote: "If there's a fight, then, I will fight. And fight with a purpose. I will not fight for America, nor for home, nor for President Eisenhower, nor for capitalism, nor even for democracy. I will fight for individualism and personal liberty. If I must be a fool, I want to be my own particular brand of fool—utterly unlike other fools. I will fight to avoid becoming a number—to others and to myself."[4]

For Stewart Brand, the national struggle to save America and the world from Soviet assault and nuclear holocaust was intimately entwined with his individual adolescent struggle to become his own person. And Brand was not unique in this respect. For college students of his time, the imagined gray mass of the Soviet Army was a mirror image of the army of gray flannel men who marched off to work every morning in the concrete towers of American industry. The soldier in his uniform was simply another form of what sociologist William Whyte called the "Organization Man."[5] Cut off from his emotions, trained to follow a chain of command, the Soviet soldier and the American middle manager alike seemed to many to be little more than worker bees inside ever-growing hives of military-industrial bureaucracy. In the 1940s and 1950s, that bureaucracy had brought forth nuclear weapons; in the 1960s it would lead Americans into the Vietnam War. As they came of age, Stewart Brand and others of his generation faced two questions: How could they keep the world from being destroyed by nuclear weapons or by the large-scale, hierarchical governmental and industrial bureaucracies that had built and used them? And how could they assert and preserve their own holistic individuality in the face of such a world?

As he sought to answer those questions, Brand turned first to the study of ecology and a systems-oriented view of the natural world. Later, after graduating from Stanford and serving several years as a draftee in the army, he found his way into a series of art worlds centered in Manhattan and San Francisco. For the artists of those communities, as for Brand's professors at Stanford, cybernetics offered a new way to model the world. Even at the height of the cold war, many of the most important artists of this period, figures such as John Cage and Robert Rauschenberg, embraced the systems orientation and even the engineers of the military-industrial research establishment. Together they read Norbert Wiener and, later, Marshall McLuhan and Buckminster Fuller; across the late 1950s and well into the 1960s, they made those writings models for their work. At the same time, both the artists he met and the authors they read presented the young Stewart Brand with a series of role models. If the army and the cold war corporate world of Brand's imagination moved according to clear lines of authority and rigid organizational structures, the art worlds of the early 1960s, like the research worlds of the 1940s, lived by networking, entrepreneurship, and collaboration. As he moved among them, Brand came to appreciate cybernetics as an intellectual framework and as a social practice; he associated both with alternative forms of communal organization.

Ecology as Alternative Politics

Brand first encountered systems-oriented ways of thinking at Stanford in a biology class taught by Paul Ehrlich. By the end of the decade, Ehrlich was famous for predicting in his book *The Population Bomb* (1968) that population growth would soon lead to ecological disaster. In the late 1950s, however, he was concentrating on the fundamentals of butterfly ecology and systems-oriented approaches to evolutionary biology. These preoccupations reflected the extraordinary influence of cybernetics and information theory on American biology following World War II. At the level of microbiology, information theory provided a new language with which to understand heredity. Under its influence, genes and sequences of DNA became information

systems, bits of text to be read and decoded. In the 1950s, as Lily Kay has pointed out, microbiology became "a communication science, allied to cybernetics, information theory, and computers." Information theory also exerted a tremendous pull on biological studies of organisms and their interaction. Before World War II, biologists often focused on the study of individual organisms, hierarchical taxonomies of species, and the sexual division of labor. Afterward, many shifted toward the study of populations and the principles of natural selection in terms modeled on cybernetic theories of command and control.[6]

Ehrlich's research and teaching in this period strongly reflected this shift. A preoccupation with systems-oriented models of the natural world informed both his lectures and the 1963 textbook *The Process of Evolution* in which he and coauthor Richard Holm summarized much of Ehrlich's thinking in the period. Ehrlich and Holm deliberately "de-emphasized taxonomic ideas such as species and subspecies." Instead of a world arrayed in Linnaean hierarchies, they offered a vision of life as "a complex energy-matter nexus."[7] Individuals, populations, and the landscapes they inhabited were entwined in constant exchanges—exchanges so pervasive that, as in the case of algae and fungi, individuals were sometimes hard to distinguish from whole populations. For Ehrlich and Holm, the classic dualities of mind and matter, actor and action, masked a series of more essential truths: individuals were elements within systems and were systems in their own right. As such, they both responded to and helped shape the flows of energy that governed all matter. This was also true for humans at the cultural level: according to Ehrlich and Holm, culture had grown out of man's biological evolution and had become a force through which humans could recursively influence their biological development. For Ehrlich and Holm, and the young Stewart Brand, cultural activities such as politics, art, conversation, and play took on a deep significance for the survival of the species. At a moment when humans threatened to destroy themselves with nuclear weapons, concrete expressions of culture offered a way to help them move forward and escape annihilation.[8]

For Brand, Ehrlich's systems orientation offered an intellectual alternative to the cold war dualisms with which he had been struggling. If hierarchical leaders such as those in the Kremlin ruled by applying force from above, and so squeezed the individuality out of their subjects, biological systems as Ehrlich described them maintained order by means of evolutionary forces at work in the life of every individual. With an analytical framework drawn from ecology and evolutionary biology, Brand could simultaneously explain the threat of the Soviet Union to the United States and the threat of hierarchies to the individual. That is, he could imagine both the Soviet

Union and bureaucratic hierarchies more generally as monocultures, systems devoted to reducing the individual variations that helped ecosystems evolve. Brand could also begin to view the political confrontation between the Soviet Union and the United States and its potential for nuclear holocaust in evolutionary terms. On the one hand, thanks to nuclear weapons, humanity found itself at a new evolutionary moment. Like other species, it had arrived at the brink of its own destruction. But on the other hand, unlike other species, it could recognize its predicament and choose to make changes. In this context, the choices that individuals made in the cultural realm became freighted with truly cosmic, evolutionary significance. In September 1958 Brand explained in his diaries that "the responsibility of evolution is on each *individual* man, as for no other species. Since the business of evolution for man has gone over to the mental and psychological phase, each person may contribute and influence the heritage of the species." For this reason, he wrote a month later, "the matter [of] freedom—social, psychological, and potential—is of the highest importance."[9] For Brand, even as a student at Stanford, the ability to think outside the dominant paradigm of cold war conflict both marked and made possible an advancement in human evolution. The liberation of the individual was simultaneously an American ideal, an evolutionary imperative, and, for Brand and millions of other adolescents, a pressing personal goal.

Cybernetic Art Worlds

The question was, How could that liberation be achieved in daily life? Brand's search for individual freedom led to a decade-long migration among a wide variety of bohemian, scientific, and academic communities. In the course of these travels, Brand encountered both communal ways of living and a series of technocentric, systems-oriented theories that served as ideological supports for communalism. Often enough, the theories themselves were not explicitly theories of social organization so much as theories of local social practices, such as how to make art or how to take LSD or how to run a business meeting. As he moved among these communities, however, and later, when his *Whole Earth Catalog* became a forum in which such communities met, Brand began to see how the systems orientation of Paul Ehrlich's population biology, combined with new, countercultural modes of living, might offer an appealingly individualistic lifestyle—not only for him, but also for anyone else who could abandon the halls of bureaucratic America.

Soon after graduating from Stanford, Brand was drafted into the army, where he spent the next two years, first as an infantryman and later as a

photographer. At the beginning, Brand took to military life and decided to become a Ranger. Midway through Ranger school, though, he decided to quit. "I wrote out every argument on both sides, knowing the conclusion was foregone, but comforted by the list," he told his diary at the time. "My vision widened, the Rangers looked admirable but wrongly zealous. And they wanting to be soldiers and I not." Although he liked the Rangers' parachute training and their camaraderie, Brand gradually come to loathe military regimentation. After leaving the Rangers, he became an army photographer at Fort Benning, Georgia; at Fort Dix, New Jersey; and briefly at the Pentagon. While stationed in Washington, he began to feel restless in his off-duty hours. "I was looking for the wrong thing," he wrote in his diary. "I was looking for San Francisco beauty, San Francisco people, San Francisco happiness—the bohemian style. . . . Therefore, Resolved—to go posh. To frequent the theaters, music halls, galleries, and homes not as an interloper taking all he can learn, but as a learning participant."[10]

Brand remained somewhat isolated in Washington, but when he returned to Fort Dix, he found his way into a swirling New York art scene. In the summer of 1960, Brand had met a young San Francisco painter named Steve Durkee; by 1961 Durkee had moved into a lower-Manhattan loft, where Brand began to visit him on weekends from Fort Dix. As he did, he began to explore a social landscape at once deeply in synch with the systems perspectives he had encountered at Stanford and entirely out of synch with the relatively ordered, hierarchical world of cold war college and military life.

Lower Manhattan in the late 1950s and early 1960s played host to a community of artists preoccupied with finding new relationships to their materials and audiences. When Brand arrived, the most influential members of the scene included musician John Cage, painter Robert Rauschenberg, and performance artist Allan Kaprow. These artists had inherited an essentially Romantic tradition, especially in painting, within which the artist struck a heroic pose. Art historian David Joselit has pointed out that the abstract expressionism that dominated American painting in the 1940s and 1950s celebrated painters as nearly mythic figures engaged in powerful acts of symbolic creation. Journalists for magazines such as *Life, Fortune,* and *Harper's Bazaar* amplified this mythology, depicting painters like Jackson Pollock as living emblems of the freedom of cold war American culture.[11]

Cage, Rauschenberg, and Kaprow worked to undermine this tradition. Since the mid-1940s, Cage had been exploring Zen Buddhism. Within Zen, he later wrote, nature was "an interrelated field or continuum, no part of which can be separated from or valued above the rest." In keeping with Zen tradition, Cage argued that the artist should not speak *to* his or her audience

about the natural world, but should instead use art to heighten the audience member's sensitivity to experiences of all kinds. Neither the artist nor the audience should be cut away from or valued above the rest of nature; on the contrary, the process of art should work to integrate them both more closely into the natural systems of which they were already part. Whereas the high modernists of midcentury New York had become famous by making images of their own intentions, which were captured in brush strokes, Cage insisted that "the highest purpose [of an artist] is to have no purpose at all. This puts one in accord with nature in her manner of operation." For Cage, the rational, ordering mind that Theodore Roszak would later call "objective consciousness" had no place in art. Robert Rauschenberg agreed. "I don't want painting to be just an expression of my personality," he explained. "And I'm opposed to the whole idea of conception-execution—of getting an idea for a picture and then carrying it out. I've always felt as though, whatever I've used and whatever I've done, the method was always closer to a *collaboration* with materials than to any kind of conscious manipulation and control."[12]

At one level, the work of Cage and Rauschenberg represented an attack on the hierarchies of cold war art and cold war artistic process. While emblematic artists of cold war American culture such as such as the abstract expressionists worked to demonstrate a mastery of the canvas and to create a product that could then be sold as evidence of that mastery, Cage and Rauschenberg offered up a view of artistic practice as a leveled collaboration among artist, audience, and materials. At another level, though, their work echoed and ultimately celebrated a migration toward the decentralized, systems-oriented forms of thought then occurring at the center of the scientific establishment. Writing in the *Hudson Review* at about the time that Stewart Brand was making his weekend forays into Manhattan, for example, art critic and professor Leonard B. Meyer described this movement and its effects on American art in this period. His view was that American artists had begun to work from the premise that "man is no longer . . . the center of the universe" and that the universe itself, as revealed by quantum physics, was an indeterminate system. In the work of Cage and Rauschenberg, he was right: for them, the making of art had become the building of systems of pattern and randomness, and thus, in Claude Shannon's sense, of information.[13]

For Stewart Brand, such insights echoed Paul Ehrlich's systems view of the natural world. They also offered new models for living. Starting in the early 1950s, Cage and his friends began to build artistic systems that would play out in real time. In 1952, for instance, at Black Mountain College in North Carolina, Cage created an event called Theatre Piece No. 1 in which

audience members found themselves surrounded by Robert Rauschenberg's "White Paintings" and, among them, Merce Cunningham performing improvised dances, M. C. Richards reading poetry on a ladder, David Tudor playing piano, and Cage himself delivering a lecture. In 1958 Allan Kaprow christened these sorts of events "happenings."[14] Kaprow had studied with Cage at the New School for Social Research. At the turn of the decade, he and artists such as Jim Dine, Claes Oldenburg, and Red Grooms blended Cage's systems orientation to artistic production with the abstract expressionist painters' focus on action. They developed a form of art in which artists, audience, and materials worked together to blur the boundary between art and life. Using materials gathered out of everyday life, they built theatrical environments inhabited by performers, objects, and bits of text, and invited audience members to wander through. On any given evening, art fans in jackets and ties might find themselves walking through a room hung with sheets of paper, a man on a swing swaying back and forth over their heads. They might watch artists roll around in chicken guts on the floor. Or they might visit a "shrine" made out of junkyard metal and paper trash. Like Cage's music or Rauschenberg's paintings, Kaprow and company's happenings brought to life a world of chance experience built out of everyday materials. Within that world traditional artistic hierarchies were leveled. The artist, the audience, the experience of theater, the experience of daily life—all were equivalent elements in a single complex system of exchange.

To Brand, happenings offered a picture of a world where hierarchies had dissolved, where each moment might be as wonderful as the last, and where every person could turn her or his life into art. After his discharge from the army in 1962, Brand began to look for such worlds in earnest. Over the next six years, he traveled back and forth between the artistic bohemias of New York City and the emerging hippie scene in Haight-Ashbury. He visited Indian reservations in the Southwest, government-sponsored psychological researchers in Palo Alto, California, and, ultimately, a series of communes. Each of these settings provided a glimpse of a new way of living. Together, they began to supply the people and ideas whose interconnections would underlie the formation of the Whole Earth network in the years to come.

Among the first communities into which Brand found his way was the influential art tribe USCO. Around 1962 Steve Durkee met up with a San Francisco–based poet named Gerd Stern. Within a year, Stern began collaborating on a series of multimedia performances with a young technician from the San Francisco Tape Music Center named Michael Callahan. By 1964 Durkee, Stern, and Callahan, together with a floating circus of friends and family, had taken up residence in an old Methodist church in

Garnerville, New York, about an hour north of Manhattan. They christened their art troupe USCO—short for "The US Company." Over the next four years, they transformed the "happening" into a psychedelic celebration of technology and mystical community that found its way into the burgeoning LSD scene in San Francisco and the pages of *Life* magazine.

Brand worked off and on with USCO as a photographer and a technician between 1963 and 1966, living at the Garnerville church for short periods between his travels. Within USCO, he encountered the first stirrings of the New Communalist movement. Like Cage and Rauschenberg, the members of USCO created art intended to transform the audience's consciousness. They also drew on many diverse electronic technologies to achieve their effects. Strobe lights, light projectors, tape decks, stereo speakers, slide sorters—for USCO, the products of technocratic industry served as handy tools for transforming their viewers' collective mind-set. So did psychedelic drugs. Marijuana and peyote and, later, LSD, offered members of USCO, including Brand, a chance to engage in a mystical experience of togetherness. And USCO's work did not stop at the end of each performance. Gathering at their church in Garnerville and then again at performance sites around the country, the members of USCO lived and worked together steadily for a period of years. Like a cross between a touring rock entourage and a commune, USCO was more than a performance team. It was a social system unto itself. Through it, Brand encountered the works of Norbert Wiener, Marshall McLuhan, and Buckminster Fuller—all of whom would become key influences on the Whole Earth community—and began to imagine a new synthesis of cybernetic theory and countercultural politics.

USCO was founded on a fusion of Eastern mysticism and ecological, systems thinking. Its members chose the name USCO in accordance with the teachings of Ananda K. Coomeraswamy, an early-twentieth-century scholar of Indian art then popular among Manhattan bohemians. Coomeraswamy had asserted that artists in traditional societies were as anonymous as tradesmen. The members of USCO saw themselves returning to a more traditional mode of tribal living and collective craftsmanship. The tribe would be bound together through various rituals involving drugs, mystical forces, and electrical technologies. As art critic Naomi Feigelson put it in 1968, "Collectively and individually USCO is hung up on light and its symbolic meanings, on the Kaballah and mysticism, on the divine geometry of living things and electrical phenomena."[15] But USCO's founders were also steeped in the literature of cybernetics. Gerd Stern, a European Jew and a World War II–era refugee, saw Norbert Wiener as a child of European transplants like himself and was thoroughly versed in his writings. In large part for this

reason, light, electricity, and mystical "energy" generally played a role in USCO's work very much like the one "information" plays in Wienerian cybernetics: they became universal forces that, functioning as the sources and content of all "systems" (biological, social, and mechanical), made it possible for individual people, groups, and artifacts to be seen as mirrors of one another. A promotional brochure for a 1968 USCO presentation at New York's Whitney Museum of Art described the group this way: USCO "unites the cults of mysticism and technology as a basis for introspection and communication."[16]

Like Wiener's cybernetics, USCO's techno-mystical ideology emerged out of and supported multidisciplinary collaboration in a workshop setting. The group's productions ranged from three-dimensional poems, with flashing lights and bold-faced words, to multimedia slide, light, and sound shows and psychedelic posters. Each production required input by artists with a variety of technical skills, and the collaboration in turn required both a contact language in which the artists could speak to one another and a rationale to drive their production. Techno-mysticism filled both bills. "They have an artistic point of view," wrote Naomi Feigelson in 1968, "a critical, philosophical approach to life, and a goal beyond today. They are a group of individual artists, each disciplined in his own craft, and all together they are on a work trip." For the artists of USCO, technical work on multimedia projects offered a way to plug in to mystical currents that flowed among the group's members and within each of them. Like the anti-aircraft gunner operating Wiener's theoretical predictor, they could see themselves as parts of a techno-social system, serving new machines and being served by them. Such a vision did not mean that the members of USCO entirely escaped the questions of leadership and issues of gender politics that they ascribed to mainstream society. On the contrary: former members recall that Durkee and Stern served as alpha males to the group and frequently, if indirectly, struggled to control its direction.[17] Although women (notably Durkee's wife, Barbara), played important roles in the group, leadership fell to men. Nevertheless, with their mystical conviction of collective unity, the members of USCO could confront the hard-bodied, bifurcated universe of cold war politics and its potentially world-ending nuclear weapons with a vision of transpersonal and potentially transnational harmony.

To bring that vision to life in performance, USCO operated on organizational principles that would have been quite familiar to Brand from his studies with Paul Ehrlich. Rather than work with a transmission model of communication, in which performers or others attempt to send a message to their audience, USCO events tried to take advantage of what Gerd Stern called "the environmental circumstance." That is, USCO constructed

all-encompassing technological environments, theatrical ecologies in which the audience was simply one species of being among many, and waited to observe their effects. As Steve Durkee put it, they built artistic worlds just like "God created the universe."[18] Early projects were relatively simple. In 1963, for instance, Stern developed a project called "Verbal American Landscape," in which three slide projectors showed, in random sequence, photographs—many taken by Stewart Brand—of individual words found on road signs and billboards. Viewers were left to piece the words together into meanings of their own. Gradually "Verbal American Landscape" was absorbed into more complex shows. In a 1963 performance entitled "Who R U?" at the San Francisco Museum of Art, Stern and Callahan added highway sounds to the mix, moving them from speaker to speaker in the showroom. They also had individuals placed in booths around a central auditorium, miked their conversations, and replayed them simultaneously in an eighteen-channel remix. By 1965 this show had morphed into a program called "We R All One," in which USCO deployed slide and film projections, oscilloscopes, music, strobes, and live dancers to create a sensory cacophony. At the end of the performance, the lights would go down, and for ten minutes the audience would hear multiple "Om's" from the speakers. According to Stern, the show was designed to lead viewers from "overload to spiritual meditation."[19] In the final moments, the audience was to experience the mystical unity that ostensibly bound together USCO's members.

Comprehensive Designers: Marshall McLuhan and Buckminster Fuller

By the mid-1960s, USCO's performances marked the cutting edge of countercultural art. USCO had built multimedia backdrops for talks by Timothy Leary (whose Millbrook, New York, mansion received regular visits from USCO members) and Marshall McLuhan. In 1966 they supplied multimedia designs for Murray the K's World—a huge discotheque created within an abandoned airplane hangar—that appeared on the cover of *Life* magazine. In May of that year, they built an installation they called "Shrine" at New York's Riverside Museum. Audience members sat on the floor around a large aluminum column. Around them, a nine-foot-high hexagon featured Steve Durkee's paintings of Shiva and the Buddha, as well as flashing lights and other psychedelic imagery. They inhaled burning incense and listened to a sound collage and stayed as long as they liked. USCO called the installation a "be-in" because of the ways audience members were supposed to inhabit and not simply observe the work. On September 9, 1966, *Life* featured USCO's "Shrine" in a cover story on psychedelic art and introduced the

notion of a "be-in" to a national readership for what was almost certainly the first time.[20]

USCO's performances brought with them two important transformations of the earliest artistic happenings. First, they aimed not only to help their audiences become more aware of their surroundings but also to help them imagine themselves as members of a mystical community. Second, to bring about that understanding, USCO turned to the materials of everyday life and to new electronic communication technologies. These turns grew in large part out of USCO's engagement with the technocentric visions of Marshall McLuhan and Buckminster Fuller. Each of these theorists depicted technology as a tool for social transformation. At the same time, both turned their backs on the bureaucratic world of mainstream technocratic production. In their writings and their speeches, each cultivated a style of orphic collage. To readers raised on the declarative sentences of Ernest Hemingway, McLuhan and Fuller offered a kaleidoscopic alternative. Words and ideas collided with one another across their texts, sparking insights, creating flashpoints, energizing their readers. What is more, McLuhan and Fuller seemed to live lives in synch with their prose. Even though McLuhan held a teaching post in Canada, both he and Fuller traveled constantly in the mid-1960s. For the young people who flocked to their lectures, their peregrinations offered a model of an entrepreneurial, individualistic mode of being that was far from the world of the organization man—and yet a mode in which they still didn't need to give up the stereos and automobiles and radios that industrial society had created. Ultimately, McLuhan, and especially Fuller, would offer Stewart Brand both ways of imagining technology as a source of social transformation and living models of how to become a cultural entrepreneur.

By the time Marshall McLuhan came to the attention of the artists in USCO, he had been a professor of English literature, primarily at the University of Toronto, for nearly twenty years. He had edited a volume of Tennyson's poetry, converted to Catholicism, and spent most of his working life in Canada. Little in this work suggested that he would become the most popular media theorist of the 1960s. Yet, alongside his teaching and his work on poetry, McLuhan developed a fascination with technology and its role in psychological and cultural change. Most critics trace this interest to his reading of the Canadian economic historian Harold Innis.[21] But McLuhan also drew extensively on the work of Norbert Wiener. As McLuhan's first PhD student, Donald Theall, has pointed out, McLuhan encountered Norbert Wiener's *Cybernetics* in the summer of 1950. According to Theall, who was studying with McLuhan at the time, McLuhan rejected the mathematical theory of communication that Wiener laid out in *Cybernetics* but was deeply

influenced by the vision of the social role of communication outlined in Wiener's 1950 volume *The Human Use of Human Beings*.[22] McLuhan began reading the work of other cyberneticians, and in 1951 he took up Jürgen Ruesch and Gregory Bateson's *Communication: The Social Matrix of Psychiatry*. According to Ruesch and Bateson, the self that was the subject of psychiatry was enmeshed in and largely shaped by a complex web of information exchange. In keeping with Wiener's cybernetics, they viewed social life as a system of communication and the individual as both a key element within that system and a system in his or her own right. When McLuhan was engaging with cybernetics, he was also exploring tribalism and art with his colleague Edmund Carpenter, an authority on the Inuit. In 1953 Carpenter and McLuhan established a series of weekly seminars on communication and media and a journal entitled *Explorations*. Together, journal and seminar served as a forum for McLuhan to brew up many of the insights for which he became famous.

The twin interests in cybernetic approaches to communication media and tribal forms of social organization that McLuhan developed in the early 1950s became key elements of his media theories in the early 1960s and important influences on the art worlds of that period. In 1962 and 1964 McLuhan published *The Gutenberg Galaxy* and *Understanding Media*, which, together, argued that transformations in communication technology were bringing about the retribalization of society. *The Gutenberg Galaxy* asserted that mankind was leaving a typographic age and entering an electronic one. With its sequential orientation, its segmented letters and words, McLuhan claimed, the technology of type had tended to create a world of "lineal specialism and separation of functions." That is, he held type responsible in large part for the development of rationalization, bureaucracy, and industrial life. By contrast, he said, electronic technologies had begun to break down the barriers of bureaucracy, as well as those of time and space, and so had brought human beings to the brink of a new age. In *The Gutenberg Galaxy* McLuhan described the new age in tribal terms: electronic media had linked all of humanity into a single "global village." In *Understanding Media*, McLuhan linked both the new tribalism and its promise of a return to a prebureaucratic humanism to a more cybernetic rhetoric of human-machine entanglement as well. "Today," he wrote, "we have extended our central nervous system itself in a global embrace, abolishing both space and time as far as our planet is concerned."[23] In McLuhan's view, the individual human body and the species as a whole were linked by a single nervous system, an array of electronic signals fired across neurons in the human body and circulating from television set to television set, radio to radio, computer to computer, across the globe.[24]

This worldwide web of electronic signals carried a mystical charge for many. In McLuhan's work, the charge tended to invoke a vision of mystical Christian unity, but for the young bohemians of the 1960s, it did not need to refer to anything more dogmatic than the felt sense of generational togetherness. At one level, USCO's motto—"We Are All One"—echoed McLuhan's Catholic striving toward a universal humanism. When the members of USCO built their multimedia environments, they hoped their audiences would feel their own, individual senses meld into the global nerve system of electronic media. At a more local level, though, the "we" of USCO's motto referred primarily to the members of USCO itself, the vanguard techno-tribesmen who recognized the power of McLuhan's vision. Even as they labored to introduce their audiences to the notion that all humans were one, the members of USCO created a workaday world in which the members of USCO were themselves brought into a state of collaborative unity through their work with electronic media. In that sense, the "we" of USCO's motto reflected a *turning away* from the global humanism of McLuhan's vision and back toward a more traditional notion of a visionary avant-garde. Early on, the members of USCO painted two words over the doors to the Garnerville church that captured this mix of anti-authoritarian humanism and tribal elitism well: "Just Us."

The same tension between global humanist ideals and local elite practice would haunt much of the New Communalist movement over the next decade, and the Whole Earth network for years after that. But in the early 1960s, the linking of the global and the local helped account for much of Marshall McLuhan's appeal within the emerging counterculture. McLuhan's simultaneous celebration of new media and tribal social forms allowed people like Stewart Brand to imagine technology itself as a tool with which to resolve the twin cold war dilemmas of humanity's fate and their own trajectory into adulthood. That is, McLuhan offered a vision in which young people who had been raised on rock and roll, television, and the associated pleasures of consumption need not give those pleasures up even if they rejected the adult society that had created them. Even if the social order of technocracy threatened the species with nuclear annihilation and the individual young person with psychic fragmentation, the media technologies produced by that order offered the possibility of individual and collective transformation. McLuhan's dual emphases also allowed young people to imagine the local communities they built around these media not simply as communities built around consumption of industrial products, but as model communities for a new society. In McLuhan's writing, and in the artistic practice of groups like USCO and, later, the psychedelic practices of groups like San Francisco's Merry Pranksters, technologies produced by mass,

industrial society offered the keys to transforming and thus to saving the adult world.

No one promoted this doctrine more fervently than the technocratic polymath Buckminster Fuller. Architect, designer, and traveling speechmaker, Fuller became an inspiration to Stewart Brand, the Whole Earth network, and the New Communalist movement as a whole across the 1960s. The geodesic domes Fuller patented soon after World War II came to be favored housing on communes throughout the Southwest. Fragments of his idiosyncratic conceptual vocabulary, such as "tensegrity," "synergy" and "Spaceship Earth," bubbled up steadily in discussions of how and why alternative communities should be built. And Fuller himself—seventy years old in 1965, short, plump, bespectacled, and, when he spoke in public, often clad in a three-piece suit with an honorary Phi Beta Kappa key dangling at the waist—seemed to model a kind of childlike innocence that many New Communalists sought to bring into their own adulthoods.[25] If the politicians and CEOs of mainstream America were distant and emotionally reserved, Fuller was playful and engaged. And like his young audiences, he displayed a highly individualistic turn of mind and a deep concern with the fate of the species.

Fuller made his name designing futuristic technologies such as the three-wheeled Dymaxion car and, most famously, the geodesic dome, but the roots of his interests reached deep into America's pre-industrial past. Born in 1895, Fuller was the latest in a long line of Unitarian ministers, lawyers, and writers. His great-aunt, Margaret Fuller, had joined Ralph Waldo Emerson to cofound the *Dial,* the preeminent literary journal of American Transcendentalism and the first magazine to publish Henry David Thoreau. Margaret served as an intellectual model for the young Buckminster. "When I heard that Aunt Margaret said, 'I must start with the universe and work down to the parts, I must have an understanding of it,' that became a great drive for me," he recalled.[26] For the Transcendentalists, as later for Fuller himself, the material world could be imagined as a series of corresponding forms, each linked to every other according to invisible but omnipresent principles. Emerson explained the point this way:

> The law of harmonic sound reappears in the harmonic colors. The granite is differenced in its laws only by the more or less of heat from the river that wears it away. The river, as it flows, resembles the air that flows over it; the air resembles the light which traversed it with more subtle currents; the light resembles the heat which rides with it through Space. Each creature is only a modification of the other; the likeness in them is more than the difference, and their radical law is one and the same. A rule of one art, or a law of one organization holds true throughout nature.[27]

Fuller, like Emerson, saw the material world as the reflection of an otherwise intangible system of rules. But unlike Emerson and the Transcendentalists, Fuller linked that system of rules not only to the natural world, but also to the world of industry. During World War I, Fuller had watched his four-year-old daughter Alexandra die of infantile paralysis, contracted in part, he believed, because the family's home was badly built. At the time, he was working as a contractor with the navy. Earlier, as a junior officer, he had seen how, with proper coordination, extraordinary industrial resources could be mustered to solve military problems. In his view, his daughter had died directly from a disease but indirectly from a failure to distribute the world's resources appropriately.[28] This conviction grew during World War II and the early years of the cold war, when once again Fuller saw the full scope of industrial production at work, as well as the inequality with which the world's resources were distributed. What humankind required, he came to believe, was an individual who could recognize the universal patterns inherent in nature, design new technologies in accord with both these patterns and the industrial resources already created by corporations and the military, and see that those new technologies were deployed in everyday life.

In a 1963 volume called *Ideas and Integrities,* a book that would have a strong impact on USCO and Stewart Brand, Fuller named this individual the "Comprehensive Designer."[29] According to Fuller, the Comprehensive Designer would not be another specialist, but would instead stand outside the halls of industry and science, processing the information they produced, observing the technologies they developed, and translating both into tools for human happiness. Unlike specialists, the Comprehensive Designer would be aware of the system's need for balance and the current deployment of its resources. He would then act as a "harvester of the potentials of the realm," gathering up the products and techniques of industry and redistributing them in accord with the systemic patterns that only he and other comprehensivists could perceive. To do this work, the Designer would need to have access to all of the information generated within America's burgeoning technocracy while at the same time remaining outside it. He would need to become "an emerging synthesis of artist, inventor, mechanic, objective economist and evolutionary strategist."[30] Constantly poring over the population surveys, resource analyses, and technical reports produced by states and industries, but never letting himself become a full-time employee of any of these, the Comprehensive Designer would finally see what the bureaucrat could not: the whole picture.

Being able to see the whole picture would allow the Comprehensive Designer to realign both his individual psyche and the deployment of political

power with the laws of nature. In contrast to the bureaucrat, who, so many critics of technocracy had suggested, had been psychologically broken down by the demands of his work, the Comprehensive Designer would be intellectually and emotionally whole. Neither engineer nor artist, but always both simultaneously, he would achieve psychological integration even while working with the products of technocracy. Likewise, whereas bureaucrats exerted their power by means of political parties and armies and, in Fuller's view, thus failed to properly distribute the world's resources, the Comprehensive Designer would wield his power systematically. That is, he would analyze the data he had gathered, attempt to visualize the world's needs now and in the future, and then design technologies that would meet those needs. Agonistic politics, Fuller implied, would become irrelevant. What would change the world was "comprehensive anticipatory design science."[31]

Both Stewart Brand and the members of USCO were steeped in Fuller's writings by the mid-1960s. Brand would go on to write to Fuller, to attend his lectures, and, in the first edition of the *Whole Earth Catalog,* to claim that "the insights of Buckminster Fuller are what initiated this catalog." In retrospect, it is easy to understand Fuller's appeal to cold war American youth. Like McLuhan, he simultaneously embraced the pleasures and power associated with the products of technocracy and offered his audiences a way to avoid becoming technocratic drones. Moreover, according to Fuller the proper deployment of information and technology could literally save the human species from annihilation. As he put it in *Ideas and Integrities,* "If man is to continue as a successful pattern-complex function in universal evolution, it will be because the next decades will have witnessed the artist-scientist's spontaneous seizure of the prime design responsibility and his successful conversion of the total capability of tool-augmented man from killingry to advanced livingry—adequate for all humanity."[32] In Fuller's view, the Comprehensive Designer not only did not need to don a gray flannel suit when he went to work; he actually needed to become an artist and an intellectual migrant. To a generation preoccupied with the fear of becoming lockstep corporate adults on the military model of Brand's imagined Soviet Army, Buckminster Fuller offered a marvelously playful alternative.

Fuller's vision of the Comprehensive Designer carried with it, nonetheless, intellectual frameworks and social ideals formulated at the core of military research culture. Foremost among these was Fuller's notion of the world as an information system. In his numerous autobiographical writings, Fuller traces the origins of his ideas about the world as a system to his Transcendental lineage and especially to his time on board ships—which he

considered closed systems—when he was a naval officer. Yet his writings also bear the imprint of cold war–era military-industrial information theory. For Fuller, as for Wiener and the systems analysts of later decades, the material world consisted of information patterns made manifest. The patterns could be modeled and manipulated by information technologies, notably the computer. The computer in turn could suffice as a model for the human being. After all, although Fuller's Comprehensive Designer promises to be psychologically integrated as specialists are not, that integration depends on the Designer's ability to process vast quantities of information so as to perceive social and technological patterns. Fuller's Comprehensive Designer is, from a functional point of view at least, an information processor, and as such he is a descendent of cold war psychology and systems theory as much as a child of Fuller's own imagination.

Even Fuller's work style echoes the collaborative ethos of World War II research. According to Fuller and, later, his countercultural admirers, the Comprehensive Designer came by his comprehensive viewpoint only by stepping away from the industrial and military institutions in which specialists had long been trapped. Only the freestanding individual "could find the time to think in a cosmically adequate manner," he explained. Fuller himself lived accordingly: for most of his career, he migrated among a series of universities and colleges, designing projects, collaborating with students and faculty—and always claiming the rights to whatever the collaborations produced.[33] In his writings, Fuller offered his travels as a model of the proper behavior for a Comprehensive Designer and suggested that such a life was genuinely new. Yet a quick glance back at MIT's Rad Lab in World War II would have reminded Fuller's audiences that interdisciplinary migration and multi-institutional collaboration were key features of the military research world.

Fuller's debts to the military-industrial complex went unremarked within USCO. In the New York art world of the mid-1960s, Fuller seemed to speak for the avant-garde. His belief that new technological environments could transform societies into leveled, harmonious systems echoed the ways Allan Kaprow and others claimed that artistic environments might transform their audiences. And his call for a corps of Comprehensive Designers held enormous appeal. In keeping with Fuller's views, the members of USCO went on to design comprehensive media environments that could inspire a new, more harmonious social world. In USCO's Garnerville church, as in the writings of Wiener, McLuhan, and Fuller, traditional party-based politics fell away. In its place, a creative, independent elite sought to put the world back in balance by manipulating information and technology.

Indians, Beats, and Hippies

Even as Brand was participating in the technocentric rituals of USCO, he was continuing to search for new, flexible modes of living in other realms as well. Soon after Brand left the army, an old family friend, Dick Raymond, commissioned him to take photographs of the Warm Springs Indian Reservation in central Oregon for a brochure. Over the next three years, when he was not working with USCO, Brand visited the Warm Springs Reservation and Blackfoot, Navajo, Hopi, and Papago reservations as well. When he began this project, he saw Native Americans in terms long set by Anglo-American myth. They were the custodians of the American landscape and, as such, guides to the preservation of the American wilderness. Over time, however, Brand began to reimagine Native Americans in light of his readings of McLuhan and Fuller. In his journals of 1964, he wrote that a new era was dawning. The old era had been dominated by a "Protestant consciousness"; under it, "mystery subsided into number, uniform and linear. Specialization gradually pervaded Western society, became malignant, and then suddenly, with the acceleration of electricity and computer automation, it passed its own breakpoint into an era of tribal endeavor and cosmic consciousness still un-named. Americans dwelling in the wilderness of changing eras are re-learning to be natives from the most native Americans, The Indians, studying with the new clarity the ancient harmony of a shared land-heritage." For Brand, as for many counterculturalists in the decade to follow, Native Americans became symbolic figures of authenticity and alternative community.[34] If the white-collar man of the 1950s had become detached from the land and from his own emotions, the Native American could show him how to be at home again, physically and psychologically. If the large corporations and governments of the twentieth century were organized in psychologically and socially divisive hierarchies, the world of the Native American was organized into tribes. Polis, family, community: within Brand's heavily idealized vision of Native Americans, all three exist harmoniously as elements of a single unity, the tribe. And if technology had finally begun to draw Americans toward a "cosmic consciousness," well, the Indians had been there all along.

Not long after he started working with the Warm Springs Indians, Brand read a book that seemed to confirm his inkling that Indians might hold the key to a nonhierarchical world, Ken Kesey's 1962 novel *One Flew Over the Cuckoo's Nest*. There Kesey told the story of McMurphy, an individualistic con man imprisoned in a mental hospital, and his struggle against his rigid, unfeeling floor manager, Nurse Ratched (also known as "Big Nurse"). His narrator was another patient, the Native American Chief Bromden.

McMurphy's struggle with Ratched and Chief Bromden's ultimate escape from the ward served, in Brand's view, as emblems of his own struggle to establish an independent identity. The novel, he wrote in his journal, gave him "the answer to my dilemma between revolution against the Combine and preservation of things like old Indian ways. No dilemma. They're identical. As Kesey writes it, the battle of McMurphy versus Big Nurse is identical with [Warm Springs] Indians versus Dalles Dam [on Oregon's Columbia River] or me versus the Army."[35] For Brand, the hierarchical institutions of the hospital in Kesey's book and the government on the reservation mirrored each other. McMurphy's struggle for independence was Brand's own, and Chief Bromden's escape from the hospital at novel's end neatly described Brand's own desire for de-institutionalized freedom. As he read *One Flew Over the Cuckoo's Nest* and as he traveled from reservation to reservation, Brand, like Kesey, began to link his own struggle against hierarchy and his generation's struggle against technocracy to a mythic American past.

As he did so, however, he found a way to bring a countercultural version of that past to life. In 1963 Brand wrote a low-key letter introducing himself to Ken Kesey and soon after met him face-to-face. By that time, Kesey was not only an increasingly famous author, but the host of a burgeoning psychedelic scene on the San Francisco peninsula as well. In 1958 Kesey had come to Palo Alto as a graduate student in Stanford's creative writing program. Over the next few years, the program admitted a stellar roster, including future novelists Larry McMurtry, Ed McClanahan, Robert Stone, and Gurney Norman. While there, Kesey wrote much of *One Flew Over the Cuckoo's Nest*. He also began to develop an affection for psychedelic drugs. In 1959 Kesey became a subject in a series of experimental protocols at the Veterans Hospital in Menlo Park, sponsored by the CIA's MK-ULTRA program. Doctors in these experiments gave volunteer subjects various psychedelic drugs and observed their behavior. In return they offered the subjects small amounts of cash. Between 1959 and 1960, Kesey tried LSD, psilocybin mushrooms, mescaline, and the amphetamine IT-290.[36] The CIA believed that these drugs had the potential to become weapons in the cold war, breaking down the psyches of spies, for instance, and making them more amenable to questioning.[37] Kesey saw quite a different effect:

> The first drug trips were, for most of us, shell-shattering ordeals that left us blinking kneedeep in the cracked crusts of our pie-in-sky personalities. Suddenly people were stripped before one another and behold! As we looked, and were looked on, we all made a great discovery: we were beautiful. Naked and helpless and sensitive as a snake after skinning, but far more human than that shining knightmare that had stood creaking in previous parade rest. We were alive and life was us. We joined hands and danced barefoot amongst the rubble. We had been cleansed, liberated! We would never don the old armors again.[38]

For Kesey, LSD served as a weapon in the same generational struggle that occupied Stewart Brand. Symbolically, Kesey's "knightmare" echoes Brand's undergraduate fear of growing up to don psychic armor on behalf of a militarized corporate state. In this context, LSD was a benevolent wake-up call, one that allowed Kesey to step out of the regimented ranks of adulthood and become childlike, flexible, barefoot and dancing. Stewart Brand's first experience taught him a somewhat different lesson. Brand was first given LSD in December of 1962 at the International Federation for Advanced Study (IFAS), an organization founded a year earlier by Myron Stolaroff, an engineer from the Ampex Corporation, and Willis Harman, a professor of engineering at Stanford and later a futurist at the Stanford Research Institute. Stolaroff and Harman had built the institute in order to explore the psychological effects of LSD; by 1962 they were charging subjects like Brand five hundred dollars for a daylong trip guided by one of several local psychologists. The man in charge of Brand's procedure was Jim Fadiman, who later served for several months at Stanford Research Institute's Augmentation Research Center—the division that in 1963 sponsored Douglas Engelbart's research on networked computing. According to Brand's journals, he received two doses of LSD, one in a "goblet" and the other, an hour later, by injection. Fadiman and others then had Brand look at a mural, a yin-yang mandala, and a series of other images, including pictures of his family. They played classical music. They asked Brand how he felt ("very *thing*" he replied).[39] Eventually, the session ended and Brand wandered off to dinner at Fadiman's house, still high.

Brand was put off by the highly structured, pseudoscientific trappings of the IFAS procedure, but the notion that psychedelic drugs could alter one's perceptions took. Brand soon began to hang out with a group devoted to "tripping" in every sense: the Merry Pranksters. The Pranksters had first come together around Kesey's house on Perry Lane on the edge of the Stanford campus. Not long after he began visiting the Veterans Hospital in Menlo Park, Kesey began bringing drugs home. A scene began to emerge: some of the writers from Stanford, the artist Roy Seburn, psychologist Richard Alpert (later known as Baba Ram Dass), guitarist Jerry Garcia, Page Browning—all had begun to appear for various parties. Within a year, Kesey had put together a new scene, with Page Browning and Gurney Norman remaining from the original Perry Lane crew, and in the fall of 1964 he and the Pranksters painted up an old school bus and drove east on

the first leg of the legendary tour chronicled in Tom Wolfe's *The Electric Kool-Aid Acid Test*. Brand did not go with them. As Wolfe put it, Brand represented "the restrained, reflective wing of the Merry Pranksters."[40]

Even so, to Brand the Pranksters were a West Coast version of USCO's techno-tribalism. If USCO had emerged out of an East Coast engagement with cold war avant-garde art, the Pranksters drew on the bohemian energy of San Francisco's Beatnik scene. Since the mid-1940s, the Beats had built a small, highly influential social world, and with it a literature and a way of being that had an extraordinary impact on the counterculture, especially on its West Coast contingent. The origins of the Beat movement can probably best be dated to 1944, when novelists William Burroughs and Jack Kerouac met poet Allen Ginsberg in Manhattan.[41] Over the next fifteen years, these three writers traveled to Europe, North Africa, New York, and San Francisco; together with writers and artists in each of those locations, they built a vision within which, as Ginsberg put it, "existence itself was God." For the Beats, cold war society was plagued by mechanical ways of living and thinking. In the years after World War II, Ginsberg later recalled, "there was a definitive shrinkage of sensation, of sensory experience, and a definite mechanical disorder of mentality that led to the cold war. . . . The desensitization had begun, the compartmentalization of the mind and heart, the cutting off of the head from the rest of the body, the robotization of mentality."[42] In response to this mechanistic world, Ginsberg and company launched a celebration of individual, embodied experience.[43] Drawing on influences ranging from German historian and mystic Oswald Spengler and nineteenth-century American Romantics such as Walt Whitman to psychologist Wilhelm Reich and semanticist Alfred Korzybski, they imagined that both the material world and the social world were imbued with meaning. That meaning could be experienced as an ecstatic state of enlightenment that was itself in tune with the deeper, mystical laws of experience: satori.

The Merry Pranksters thought the Beats offered a model of how to step outside mainstream American culture, build an alternative community, and pursue psychic wholeness even within the bowels of a militarized state. Yet the Pranksters extended the Beat vision as well. Like the Beats, they sought to experience a condition of harmonious flow, and they turned to drugs to do it. Also like the Beats, they saw the whole world as their stage and their own lives as roles that could be played for pleasure. Like USCO, however, the Pranksters appropriated technologies developed in industrial and sometimes military contexts (including LSD) and put them to work as tools for the transformation of self and community. Although Brand later recalled that Kesey and the Pranksters were unfamiliar with Buckminster Fuller's

writings and with cybernetic theory when he first met them, their technological performances suggest a deep sympathy with both.[44] For Kesey and company, body and landscape, community and state, and sometimes even biological and electronic systems were mirrors of one another. Metaphorically, when they drove their school bus into the heart of the United States, its sheet-metal skin coated with Day-Glo paint, its insides and often outsides wired with speakers and microphones, its inhabitants hairy, costumed, nicknamed, and alert, Kesey and the Pranksters dropped a tab of LSD into the belly of America. They wanted to turn the country on, to do for the nation what LSD had done for them as individuals and as a community. They wanted to show cold war America an alternative and apparently a much more adventurous, harmonious, and fun way to live. The bus was both the vehicle by which to make this new lifestyle visible and a prototype of that lifestyle itself. Are you "on the bus"? asked the Pranksters. Or not?

Both on and off the bus, the Pranksters played with the boundaries between self, community, and technology. As they drove across America, they kept a movie camera rolling. If all the world was a stage, they were living here and now, in the real, material space of everyday life, and at the same time inside a movie, in media space. They were both themselves and characters in a scene—a pattern of self-understanding that they saw as congruent with the experience of self on LSD. In part, they were self-consciously seeking to make history, and of course they did. Yet they were also working out a new relationship to technologies of communication and transportation. At one party, for instance, Tom Wolfe recalls seeing Kesey and a half dozen Pranksters sprawled out across the floor, high on LSD, ululating. They were pretending to be a "Humanoid Radio." This was partly a party joke, a prank. "The idea was to try to hit that beam and that mode that would enable you to communicate with beings on other planets, other galaxies. . . . They were all high as hell," wrote Wolfe.[45] But it also marked a weird attempt to appropriate the radio's ability to transcend distance and reach faraway minds with a single, disembodied signal. In the Pranksters' world, LSD and radio were harbingers of New Communalist possibilities. They were communication technologies through which humans could not only exchange information, but, at least imaginatively, merge with one another in a spiritually harmonious state.

Whereas USCO took up technology to make art, the Merry Pranksters deployed technology expressly to create a new consciousness and a new form of social organization. In this sense, the Pranksters represent a key origin point not only for the psychedelic side of the counterculture, but for the New Communalist movement. By 1965 the San Francisco Bay area had seen the Free Speech Movement emerge at Berkeley and had witnessed its first

antiwar protests as well. In this increasingly politicized atmosphere, Kesey and the Pranksters turned away from the politics of struggle and embraced the politics of consciousness. On October 15, 1965, Kesey was invited to speak at a rally against the Vietnam War in Berkeley. Organizers expected a fiery speech and a joining of the New Left and the growing counterculture. But rather than orate, Kesey simply stood up and announced to the audience, "You know, you're not gonna stop this war with this rally, by marching. . . . That's what *they* do."[46] He then pulled out his harmonica and played "Home on the Range." In keeping with psychedelic visions of transpersonal harmony (and with cybernetic and Romantic visions of a world linked by invisible currents of energy and information), Kesey rejected as fundamentally false the dynamics of confrontation called for by the moment and by the logic of the cold war more generally. He simply stood up and demanded that the audience not confront their enemies, but instead turn away from them and come together elsewhere.

After some confusion, the audience ignored him and continued their march. But in retrospect, Kesey's action marked a key moment in the public emergence of a New Communalist style of social action. For the Free Speech and antiwar movements, to attempt to change society meant to pursue claims on the existing political structure. In both cases, demonstrators asked for changes in policies—the policies of a university in the first case and of a nation in the second. Kesey sought nothing from established politicians, other than to be left alone. Having rejected agonistic politics, he asked demonstrators to turn away from the centers of established political power and look inward, toward each other. In place of politics, he offered the experience of togetherness; in place of a rigid, violent society, he presented the possibility of a leveled, playful community.

At the same time, he exhibited a style of leadership that would soon characterize Stewart Brand's work at the *Whole Earth Catalog* and that, over the next three decades, would migrate into debates around the social impact of digital technologies. At the Vietnam Day rally, Kesey simultaneously denied his role as a leader and assumed it, albeit in a new way, by playing his harmonica. Like the members of USCO, the Pranksters worked to step outside traditional political arrangements and celebrated a tribal togetherness. But unlike USCO, they also had a single, de facto leader: Kesey, called "the Chief" by the Pranksters. It was Kesey's earnings from *One Flew Over the Cuckoo's Nest* that had paid for the bus trip in 1964, and it was Kesey who was paying most if not all of the group's expenses (which Wolfe estimated at a hefty twenty thousand dollars per year). But neither Kesey nor anyone else would acknowledge this power explicitly. Wolfe put it this way: "Kesey took great pains not to make his role explicit. He wasn't the authority, someone

else was: 'Babbs says . . .' 'Page says . . .' He wasn't the leader, he was the 'non-navigator.' He was also the non-teacher. . . . Kesey's explicit teachings were all cryptic, metaphorical; parables, aphorisms." Within the Pranksters, Wolfe argued, Kesey's leadership and the group's direction were "The Unspoken Thing."[47]

Rather than identify the power to lead with Kesey himself, Kesey and the Pranksters turned to various devices to distribute and, ostensibly, level that power. One of the devices was a simple spinner. The Pranksters regularly played a game in which a number of them would sit in a circle. Someone would spin the spinner, and whoever it pointed to would then have full power over the group for the next thirty minutes. Another tool they used was the *I Ching*. When important decisions loomed, Kesey and others—like hippies everywhere in the coming years—would throw a set of coins, find a correlated bit of text in the book, and use it as the basis for taking action.

The spinner and the *I Ching* did serve to take power out of the hands of designated leaders. If the former turned group members into followers, it did so only temporarily, and only with the members' consent. If the latter threw up an obscure ancient fortune, it also demanded that one work out its meaning on one's own. In both cases, the individual remained empowered. But within the context of the Pranksters, these devices also served an ideological function. That is, they not only distributed some power among group members and decision-making devices, but they also diverted attention from the very real and centralized leadership Kesey was exerting. Having walked away from what they believed were the excesses of the traditional party politics practiced by the American government and its cold war allies and enemies, Kesey and the Pranksters did everything they could to deny the fact of concentrated power in their midst. In a pattern that would become familiar around the digital technologies of the 1990s, they reassigned it, at least temporarily and at least symbolically, to devices.

For Stewart Brand, Kesey became a role model and a collaborator. In January of 1966, Brand and Kesey mingled the Pranksters' vision of power with USCO's high-tech tool kit to create the single event that, more than any other, would take the San Francisco psychedelic scene public: the Trips Festival. Over the preceding year, Kesey and the Pranksters had staged about a dozen "Acid Tests."[48] According to Tom Wolfe, Kesey had originally dreamed up the notion of an acid test as a multimedia LSD fest to be staged within one of Fuller's geodesic domes with psychedelic lighting by Gerd Stern of USCO. In the end, the tests tended to be more modest—they included long-hair gatherings featuring LSD in various venues in Palo Alto, Portland, San Francisco, Los Angeles, and even Mexico. The Grateful Dead supplied much of the music. Toward the end of 1965, Brand and Ramón

Sender Barayón, a composer of electronic music and a friend of USCO's Michael Callahan, thought up the Trips Festival as a way to bring the burgeoning scene together. Together, they found promoter Bill Graham (then a member of the San Francisco Mime Troupe) and hired the Longshoreman's Hall in San Francisco for three nights: Friday, January 21, through Sunday, January 23. By this time, the federal government had outlawed LSD, so posters promised an Acid Test—a full-blown psychedelic experience—without LSD.

As it turned out, the Trips Festival featured plenty of LSD. But more importantly, it represented a coming together of the Beatnik-derived San Francisco psychedelic scene and the multimedia technophilia of art troupes such as USCO. On the first night, Brand and some friends performed his multimedia piece *America Needs Indians*. When he developed it during his time with USCO, *America Needs Indians* consisted of sound tracks, three slide projection systems, and four Native American dancers. Brand thought of it as an immersive experience, a "peyote meeting without peyote." In the open, industrial space of the Longshoremen's Hall however, the piece looked tiny, like "a teepee and some slide projectors," according to one visitor.[49] That evening, visitors wandered throughout the hall, sometimes dancing, talking and playing with bits of electronic gear scattered around the floor.

The second night brought the scene into focus. Kesey had called for the audience "to wear ecstatic dress and to bring their own gadgets (A.C. outlets will be provided)," and they did. Audience members painted in Day-Glo colors danced and watched their dancing rebroadcast live on a series of closed-circuit televisions. The hosts had arranged for live microphones and sound gear for anyone to play with. Five slide projectors splashed images on the wall; light machines scanned the room. Two bands played: the Grateful Dead and Big Brother & the Holding Company. Above it all hovered Kesey. Stationed on a balcony and wearing a space suit, he wrote messages on acetate slides and projected them onto a wall below. Jerry Garcia, lead guitarist with the Dead, recalled the feeling that characterized the early Acid Tests and the Trips Festival: "Thousands of people, man, all helplessly stoned, all finding themselves in a room of thousands of people, none of whom any of them were afraid of. It was magic, far-out beautiful magic."[50]

According to Tom Wolfe, it was also the start of the Haight-Ashbury era. The festival grossed $12,500 within three days and had spent very little in the way of overhead. Two weeks later, Bill Graham could be found staging a trips festival every weekend at the Fillmore. Within a year, teenagers from across America would be streaming into Haight-Ashbury, looking for the sort of bohemian utopia Graham was marketing. Reporters for *Time* and *Life* were not far behind. Almost immediately, San Francisco became Oz to a

generation that had feared it would grow up into a black-and-white Kansas of a world—if it lived long enough in the face of nuclear weapons and the draft to grow up at all. In myth, if not always in fact, Kesey and the Merry Pranksters became San Francisco's wizards, and as they did, they made visible to mainstream Americans the possibility of living a mobile, tribal life, a world in which the role-playing and psychological fragmentation common to the institutions of technocracy dissolved in a whirlwind of drugs, music, and travel and left standing only a more authentic, and seemingly childlike, self. For the teenagers then beginning to think of heading west, and for the reporters packing their bags to follow suit, the Trips Festival and the San Francisco scene heralded the birth of a new and open world.

The Trips Festival marked Stewart Brand's emergence as a countercultural entrepreneur—but in a deeply technocratic mold. Ten years earlier, Brand had feared that he would grow up into a world where he would have to partition his psyche and wield what power he had from within a hierarchical organization. He would have to become a soldier, cut off from both the world around him and the world within him by his uniform and his place in the ranks. At the Trips Festival, in contrast, Brand acted as a Comprehensive Designer. He built a world in which he and the dancers on the floor were part of a single, leveled social system. At one level, that system responded to the norms of the countercultural critique of technocracy. It shunned hierarchy in favor of anarchic togetherness; it turned away from emotionally removed, objective consciousness and toward a delicious, embodied, experiential magic. Like the happenings of Allan Kaprow and the music of John Cage, the Trips Festival transformed every moment into an all-encompassing now—itself a version of Beatnik satori.

At another level, though, the swirling scene at the Trips Festival, and Brand's role in it, represented a coming together of the New Communalist social ideals then emerging and the ideological and technological products of cold war technocracy. The festival itself was a techno-social hybrid. The Longshoreman's Hall surrounded dancers with the lights, images, and music of electronic media. The bodies of many dancers were infused with LSD. To the extent that they felt a sense of communion with one another, the sensation was brought about by their integration into a single techno-biological system within which, as Buckminster Fuller put it, echoing Norbert Wiener, the individual human being was simply another "pattern-complex." Brand himself had organized the event in keeping with the systems principles he had encountered at Stanford and afterward. Far from asserting direct control over events, he had built an environment, a happening, a laboratory. He had set forth the conditions under which a system might evolve and flower, and he had stocked the biological and social worlds of those who entered

that system with technologies that allowed them to feel as though the boundaries between the social and the biological, between their minds and their bodies, and between themselves and their friends, were highly permeable. He had helped found a new tribe of technology-loving Indians, artistic engineers of the self. Very soon these new Comprehensive Designers would set out from San Francisco to found their own communities in the wilderness.

When they got there, thought Brand, what they would need most would be tools and information.